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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/640,089      | 08/13/2003  | Dawn White           | DWH-11802/29        | 7656             |

7590 06/28/2005

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EXAMINER

SELLS, JAMES D

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

1734

DATE MAILED: 06/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/640,089

Applicant(s)

WHITE, DAWN

Examiner

James Sells

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If no period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 March 2005.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-43 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-43 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4, 10-15, 22-31, 34-37, 39 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grube et al (US Patent 5,155,321) in view of Lipsker (US Patent 6,153,034).

Grube discloses an additive manufacturing process of the type wherein material increments are consolidated at a bond zone to produce a part (i.e. selective laser sintering). As shown in Figs. 1 and 9, the system comprises target surface 4, piston 6, laser 10, powder cylinder 14, roller 18, radiant heater ring 30, temperature sensor 34 and infrared sensor 36. At col. 5, lines 61-66, Grube discloses maintaining uniform temperature at the surface to be heated. At col. 10, line 62 through col. 11, line 15, Grube discloses employing sensor 36 to measure and control the radiation or energy delivered to the surface. At col. 6, lines 15-30, Grube discloses that the geometries of the source and target bodies must be considered when calculating the amount of heat transferred to the target. At col. 14, lines 30-38, Grube discloses employing real-time control of the temperature during the selective laser sintering process.

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However, Grube does not disclose the computer-aided design as claimed by the applicant. Regarding this difference, the applicant is directed to the reference of Lipsker.

Lipsker discloses a system for rapid prototyping. This CAD system includes a computer 32, which contains a data-base containing three-dimensional geometry of an object 34. Lipsker further discloses that it is well known in the art of rapid prototyping to employ readily available software to communicate the geometry of object 34 to actuator 30 in accordance with a variety of protocols and coordinate systems (see col. 5, lines 1-16).

It would have been obvious to one having ordinary skill in the art to employ a CAD system, as taught by Lipsker, in the rapid prototyping process of Grube in order to facilitate object manufacture because Lipsker discloses that such CAD systems are well known in the art of rapid prototyping.

Regarding claim 1, it is noted that applicant has employed the phrase "alone or in combination". Based on this phrase, it is the examiner's position that a reference that teaches any one or more of applicant's claimed steps, anticipates applicant's claim. Therefore since the reference of Grube described above teaches maintaining consistent energy delivery to the bond zone as well as maintaining uniform thermal conditions in the bond zone, it is the examiner's position that that Grube in view of Lipsker teaches applicant's claim.

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3. Claims 5-9, 16-21, 32-33, 38 and 40-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grube in view of Lipsker as described above in paragraph 2.

Regarding claims 5-9 and 40-42, without the disclosure of unexpected results, it is the examiner's position that the look-up table and various adaptive control methods are well known and conventional in the art and would have been obvious to employ in the method of Grube in view of Lipsker described above in order to provide more precise control during the bonding process.

Regarding claims 16-21, the grid/map, height-to-width ratio and appropriate process parameters are conventional control features that are within the purview of one having ordinary skill in the art. Therefore, it would have been obvious to one having ordinary skill in the art to employ such control features in the method of Grube in view of Lipsker described above in order to facilitate manufacture of the materials.

Regarding claims 32-33 and 38, it is the examiner's position that the various heat sources (i.e. air, hot water, oil, steam, channels, sonotrode) are within the purview of one having ordinary skill in the art and would have been obvious to employ in the method of Grube in view of Lipsker described above in order to facilitate heating of the materials.

#### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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5. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 9 recites the limitation "the artificial intelligence technique" in line 1. There is insufficient antecedent basis for this limitation in the claim.

### ***Response to Arguments***

6. Applicant's arguments with respect to claims 1-43 have been considered but are moot in view of the new ground(s) of rejection.

### ***Telephone/Fax***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Sells whose telephone number is (571) 272-1237. The examiner can normally be reached on Monday-Friday between 9:30 AM and 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Fiorilla can be reached at (571) 272-1187. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

### ***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.



**JAMES SELLS  
PRIMARY EXAMINER  
TECH. CENTER 1700**